

We claim:

1. A frame saw system for cutting a block of granite, marble, or masonry material, comprising:

a plurality of spaced apart, substantially parallel blades connected to a frame; and

at least one support structure of unifying material supplied perpendicularly across the blades and adhering to at least one of the blades for keeping the blades in fixed relative positions;

wherein the support structure is capable of being removed from the frame saw system as the blades are engaged in cutting.

2. The frame saw system of claim 1, wherein the support structure forms an integral cohesive mass with the saw blades.

3. The frame saw system of claim 1, wherein the support structure comprises a polymeric foam.

4. The frame saw system of claim 3, wherein the polymeric foam includes a material selected from the group of a polyurethane, a polyethylene, a polystyrene, a polyvinyl, an acrylate, a cellophane, and a cellulosic material.

5. The frame saw system of claim 1, wherein the support structure is applied in a fluidic form and cures to form a cohesive mass bonding to at least one of the blades.

6. The frame saw system of claim 1, wherein the blades are connected on both ends to the frame by tensioning rods.

7. The frame saw system of claim 1, further comprising clamps which contact the two outermost blades of the parallel blades in the frame saw.

8. The frame saw system of claim 7, wherein the clamps comprise a plate, bolts tightened against the plate, and adjustable vertical mounts.

9. The frame saw system of claim 1, wherein the blades comprise superabrasive-containing segments.
10. A frame saw system for cutting a block of granite, marble, or masonry material, comprising:
  - a plurality of spaced apart, substantially parallel blades connected to a frame;
  - a plurality of spacers located longitudinally between the blades wherein the spaces keep the blades in fixed relative positions; and
  - clamps which contact the two outermost blades of the parallel blades in the frame saw.
11. The frame saw system of claim 10, wherein the clamps comprise a plate, bolts tightened against the plate, and adjustable vertical mounts.
12. The frame saw system of claim 10, wherein the spacers comprise a polymeric foam.
13. The frame saw system of claim 10, wherein the blades are connected on both ends to the frame by tensioning rods.
14. The frame saw system of claim 10, wherein the blades comprise superabrasive-containing segments.

15. A method for cutting a block of granite, marble, or like material, comprising the steps of:

providing a frame saw comprising a plurality of spaced apart blades;

positioning a support structure of a unifying material perpendicularly across the blade of the frame saw, wherein the support structure is adhered to at least one of the blades for keeping the blades in fixed relative positions;

subjecting the block to a sawing operation using the frame saw; and

at least substantially removing the support structure as the blades become submerged in the block.

16. The method of claim 15, wherein the positioning step comprises injecting an expandable polymeric foam mixture in between the saw blades, whereby the expansion of the foam keeps the blades in fixed relative positions.

17. The method of claim 16, wherein the foam comprises a polyurethane foam.

18. The method of claim 15, wherein the blades are connected on both ends to a frame by tensioning rods.

19. The method of claim 15, wherein a compressive force is applied perpendicularly to the parallel blades.

20. The method of claim 15, wherein the blades comprise superabrasive-containing segments.

21. The method of claim 15, wherein the sawing operation comprises using a slurry of steel shot and lime dispersed in water.

22. The method of claim 15, wherein the sawing operation comprises using cooling water.

23. A method for cutting a block of granite, marble, or like material, comprising the steps of:

applying a skim coat onto a surface of a block of material to form a substantially even surface that is substantially devoid of surface irregularities, high points, low points, and drill holes; and

subjecting the block having a skim-coated substantially even surface to a sawing operation so as to divide the block into multiple slabs.

24. The method of claim 23, wherein the skim coat comprises cement and sand.

25. A method for cutting a block of granite, marble, or like material, comprising the steps of:

applying a skim coat onto a surface of a block of material to form a substantially even surface that is substantially devoid of high points, low points, and drill holes;

providing a frame saw system comprising a plurality of spaced apart blades;

positioning a support structure of a unifying material perpendicularly across the blades of the frame saw, wherein the support structure is bonded to at least one of the blades for keeping the blades in fixed relative positions;

subjecting the block having a skim-coated even surface to a sawing operation using said frame saw system so as to divide the block into multiple slabs; and

at least substantially removing the support structure as the blades become submerged in the block.

26. The method of claim 25, wherein the skim coat comprises cement and sand.

27. A method for cutting a block of marble, granite, or masonry material comprising:

providing a frame saw system for sawing the block comprising multiple blades connected to a frame;

positioning one or more spacers longitudinally between the individual blades for keeping the blades in fixed relative positions;

applying a compressive force perpendicular to the blades; and

subjecting the block to a sawing operation using said frame saw system so as to divide the block into multiple slabs.

28. The method of claim 27, wherein the blades are connected on both ends to a frame by tensioning rods.

29. The method of claim 27, wherein the blades comprise superabrasive-containing segments.

30. The method of claim 27, wherein the sawing operation comprises using cooling water.

31. The method of claim 27, wherein the sawing operation comprises using a slurry of steel shot and lime dispersed in water.

32. A method for the manufacture of slabs by sawing comprising:

providing a frame saw system for sawing a block of marble, granite, or masonry material, wherein the frame saw system comprises multiple blades connected to a frame;

positioning a support structure of a unifying material perpendicularly across the blade of the frame saw, wherein the support structure is bonded to at least one of the blades for keeping the blades in fixed relative positions;

subjecting the block to a sawing operation using the frame saw system so as to divide the block into multiple slabs; and

at least substantially removing the support structure as the blades become submerged in the block.

33. The method of claim 32, wherein the multiple manufactured slabs have surface deviations of less than 1 mm.

34. The method of claim 32, including applying a skim coat onto a surface of the block of material before cutting to form a substantially even surface on the block.

35. A method for the manufacture of slabs comprising:

providing a frame saw system for sawing a block of marble, granite, or masonry material, wherein the frame saw system comprises multiple blades connected to a frame;

positioning one or more spacers longitudinally between the blades for keeping the blades in fixed relative positions;

applying a compressive force perpendicular to the blades; and

subjecting the block to a sawing operation using said frame saw system so as to divide the block into multiple slabs.

36. The method of claim 35, wherein the multiple manufactured slabs have surface deviations of less than 1 mm.